

REMARKS

Claim 38 is amended. New claim 55 is added. Claims 38, 42-43, 46-53 and 55 are pending in the application.

Claims 38, 46 and 51-52 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matsuda, U.S. Patent No. 6,143,597. The Examiner is reminded by direction to MPEP § 2131 that anticipation requires each and every element of a claim to be disclosed in a single prior art reference. Claims 38, 46 and 51-52 are allowable over Matsuda for at least the reason that Matsuda does not disclose each and every limitation in any of those claims.

As amended independent claim 38 recites a capacitor comprising immediately juxtaposed and contacting layers of the same capacitor dielectric composition selected from the group consisting of a barium strontium titanate, a strontium titanate, a strontium bismuth titanate, a lead lanthanate zirconia titanate, Ta_2O_5 , and mixtures thereof. Matsuda discloses a capacitor construction having a first dielectric layer 5 made of $SrBi_2Ta_2O_9$, and a second dielectric layer 6 on the first dielectric layer (col. 2, ll. 58-67). Matsuda further discloses a particular embodiment having first and second dielectric layers each comprising $SrBi_2Ta_2O_9$ (col. 3, ll. 46-55). Matsuda does not disclose the claim 38 recited two layers of the same capacitor dielectric composition selected from the group consisting of barium strontium titanate, strontium titanate, strontium bismuth titanate, lead lanthanate zirconia titanate, Ta_2O_5 , and mixtures thereof. Further, Matsuda does not suggest the recited juxtaposed layers of the recited dielectric materials and claim 38 is not rendered obvious by this reference.

Dependent claims 46 and 51-52 are allowable over Matsuda for at least the reason that they depend from allowable base claim 38.

Dependent claims 42, 43, 47-50 and 53 stand rejected under 35 U.S.C. § 103(a)

over various cited combinations of Matsuda and one of Roh, U.S. Patent No. 5,783,253; Fujii, U.S. Patent No. 5,661,319, and Park, U.S. Patent No. 5,780,115. The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Claims 42-43, 47-50 and 53 are allowable over the various cited combinations of Matsuda and Roh, Fujii or Park for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every limitation in any of those claims.

As discussed above Matsuda does not disclose or suggest the claim 38 recited two immediately juxtaposed layers of the same capacitor dielectric composition selected from the recited group of materials. With respect to Roh, the Examiner indicates that Roh discloses a capacitor depicted in Fig. 1e having immediately juxtaposed and contacting BST dielectric layers 6 and 7. Applicant notes that Roh specifically indicates that the construction depicted in Fig. 1e is formed by a two step deposition of a dielectric BST film (col. 1, ll. 20-60). Roh indicates that the two step repeated deposition and annealing to form the BST film causes contamination and degradation of the electrical characteristics of the dielectric film (col. 1, ll. 61 through col. 2, ll. 2). Roh indicates that an object of the disclosed invention is to solve the problems associated with formation of the dielectric film having BST layers 6 and 7 having the same composition. Roh specifically indicates that the problems associated with the BST films having layers 6 and 7 having the same composition are overcome by forming layers 6 and 7 of differing compositions having varied amounts of barium within each layer (col. 3, ll. 1-9 and col. 4, ll. 1-14). Accordingly, Roh specifically teaches away from utilizing

the claim 38 recited two immediately juxtaposed layers of the same capacitor dielectric composition selected from the recited group.

Fujii discloses a dielectric film having a first layer 101 and a second layer 102, wherein the second layer contains an amount of metal element in excess of the amount of that metal element comprised by the first layer 101 (col. 3, ll. 17-25; col. 3, ll. 40-52; and claims 1, 5, 9 and 10). Fujii additionally discloses that dielectric films 101 and 102 can differ in the elements contained in each layer as well as the amounts of specific elements (col. 3, ll. 54-58). Fujii does not disclose or suggest the claim 38 recited immediately juxtaposed and contacting layers of the same capacitor dielectric composition.

With respect to Park, such is cited by the Examiner to show various electrode materials. Park does not disclose or suggest the claim 38 recited immediately juxtaposed and contacting layers of the same capacitor dielectric composition selected from the recited group of compositions. As combined, Matsuda, Fujii, Park and Roh fail to disclose or suggest the claim 38 recited two immediately juxtaposed and contacting layers of the same capacitor dielectric composition selected from the group consisting of a barium strontium titanate, a strontium bismuth titanate, a strontium titanate, a lead lanthanate zirconia titanate, Ta_2O_5 and mixtures thereof. Accordingly, independent claim 38 is not rendered obvious by the cited combinations of Matsuda and Fujii, Park or Roh, and is allowable over these references.

Dependent claims 42-43, 46-50 and 53 are allowable over the various cited combinations of Matsuda and Roh, Fujii or Park for at least the reason that they depend from allowable base claim 38.

New claim 55 does not add "new matter" to the application since it is fully supported by the specification as originally filed. Claim 55 is supported by the

specification at, for example, page 4, line 19; page 4, line 23 through page 5, line 12; page 5, lines 20-22; page 8, lines 3-17; Fig. 5; and the claims as originally filed.

For the reasons discussed above pending claims 38, 42-43 and 46-53 are allowable and new claim 55 is believed allowable. Accordingly, applicant respectfully requests formal allowance of such pending claims in the Examiner's next action.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING
RESPONSE TO JANUARY 3, 2003 OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

38. (Amended) A capacitor comprising a pair of capacitor electrodes having capacitor dielectric material therebetween comprising a composite of two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material composition selected from the group consisting of a barium strontium titanate, a strontium titanate, a strontium bismuth titanate, a lead lanthanate zirconia titanate, Ta₂O₅, and mixtures thereof, both of the discrete layers being crystalline, and comprising an interface where the discrete layers contact which is characterized by a perceptible change in crystallinity from one layer to the other, the perceptible change in crystallinity being characterized by a perceptible interface line between the two discrete layers and a perceptible lateral shift in grain boundaries from the one layer to the other.

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